

B9903027 MAR 17 S.R. 56
WALTER LUM ASSOCIATES, INC.
CIVIL, STRUCTURAL, SOILS ENGINEERS

WALTER LUM
EDWARD WATANABE
EZRA KOIKE
WALLACE WAKAHIRO
3030 WAIALAE AVE., HONOLULU, HAWAII 96816 • TEL. 737-7931

August 13, 1981

FOR REFERENCE
not to be taken from this room

RECEIVED
AUG 13 1981

THE RUSS SMITH CORP.

THE RUSS SMITH CORPORATION
677 Ala Moana Boulevard, Suite 1000
Honolulu, Hawaii 96813

ATTENTION: Mr. Alan Okamoto

Gentlemen:

Subject: Grading Memorandum
Foremost Farms 3.5 M.G. Reservoir
Waimanalo, Oahu, Hawaii
Tax Map Key: 4-1-08: Por. 80

The reservoir embankment was partly constructed in fill with on-site material. The fill was placed and compacted in thin layers. A soil technician from our office was present at the site on an intermittent basis to observe grading progress and to take density tests. Whenever fill operations were on a continuous basis, a soil technician usually visited the site daily.

Grading Plan dated February 12, 1981 by The Russ Smith Corporation was used as a guide for fill depths for soil testing purposes.

A tabulation of the field density test results is attached. Where low tests were noted, the area was rerolled and in most cases retested. The density test results at the time and at the locations taken were, in our opinion, in general conformance with the density requirements of the Revised Ordinances of Honolulu, 1969 As Amended except in localized areas within the utility trench backfill.

Even though, in our opinion, the field density tests by our office conform to the density requirements of the City's Ordinance, the passage of time may result in changes in soil conditions and we suggest the following precautions:

1. Some creep or settlements may occur near the tops of slopes. Foundations near tops of slopes or over sloping ground should be avoided or designed under the guidance of an Engineer.

MUNICIPAL REFERENCE RECORDS CENTER
City & County of Honolulu
City Hall Annex, 508 S. King Street
Honolulu, Hawaii 96813

THE RUSS SMITH CORPORATION
August 13, 1981
Page 2

2. Site regrading by cutting, filling or altering the drainage pattern may cause ground instability in some situations. For this reason, site regrading should be avoided or made under the guidance of a Soils Engineer.

Our work on this project does not include the following:

Reservoir access road and grading work not observed and tested by our office.

We have employed accepted engineering and testing procedures and our professional opinions and conclusions are made in accordance with generally accepted soil and foundation engineering principles and practices. However, we do not undertake to guarantee the construction nor do we relieve the contractor of his primary responsibility to produce a completed project conforming to the project plans and specifications.

Respectfully submitted,

WALTER LUM ASSOCIATES, INC.

By Wallace Wakahiro
Wallace Wakahiro

WW:vl

cc: Brill, Inc.
Foremost Farms

WALTER LUM ASSOCIATES, INC.
CIVIL, STRUCTURAL, SOILS ENGINEERSWALTER LUM
EDWARD WATANABE
EZRA KOIKE
WALLACE WAKAHIRO
3030 WAIALAE AVE., HONOLULU, HAWAII 96816 • TEL. 737-7931TO: THE RUSS SMITH CORPORATION
677 Ala Moana Boulevard, Suite 1000
Honolulu, Hawaii 96813
ATTENTION: Mr. Alan OkamotoDATE: May 29, 1981

Gentlemen:

Re: FOREMOST FARMS 3.5 M.G. RESERVOIR
FIELD DENSITY TEST REPORTWe Are Sending You Herewith ☒Under Separate Cover ☐

☐ Prints
☒ Location Plan
☒ Field Density Test Results
☐ Boring Logs
☐ Laboratory Test Results
☐ Soil Report

☐ Review and comment
☐ Approval
☐ Signature
☒ Your use and files

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Sets 2
Sheets _____

General Remarks:

For period ending May 26, 1981.

cc: Brill, Inc.
Foremost Farms

Yours truly,

WALTER LUM ASSOCIATES, INC.

By W. Wakahe

WALTER LUM ASSOCIATES, INC.

CIVIL, STRUCTURAL, SOILS ENGINEERS

WALTER LUM
EDWARD WATANABE
EZRA KOIKE
WALLACE WAKAHIRO

3030 WAIALAE AVE., HONOLULU, HAWAII 96816

TEL. 737-7831

FIELD DENSITY TEST REPORT**FOREMOST FARMS - 3.5 M.G. RESERVOIR**

Field Density Test Results as follows:

Ending MAY 26, 1981Sheet 1 of 1 Sheets

Date	TEST NO. TEST NO.	Fill Layer*	Moisture Content	Dry Density**	Standard Density**	Relative Compaction***
5-13-81	①	13'±	39	78	91.0	86
"	RETEST ②	13'±	36	85	"	93
"	③	12'±	38	85	"	93
5-14-81	④	10'±	38	84	91.0	92
"	⑤	8'±	39	85	"	94
5-18-81	⑥	7'±	36	85	91.0	94
"	⑦	6'±	38	83	"	91
5-19-81	⑧	4'±	34	85	91.0	93
5-20-81	⑨	3'±	37	85	91.0	93
"	⑩	2'±	38	83	"	91
5-21-81	⑪	1'±	35	86	91.0	94
5-26-81	⑫	18'±	38	85	91.0	93

REROLLED
AND
RETESTED

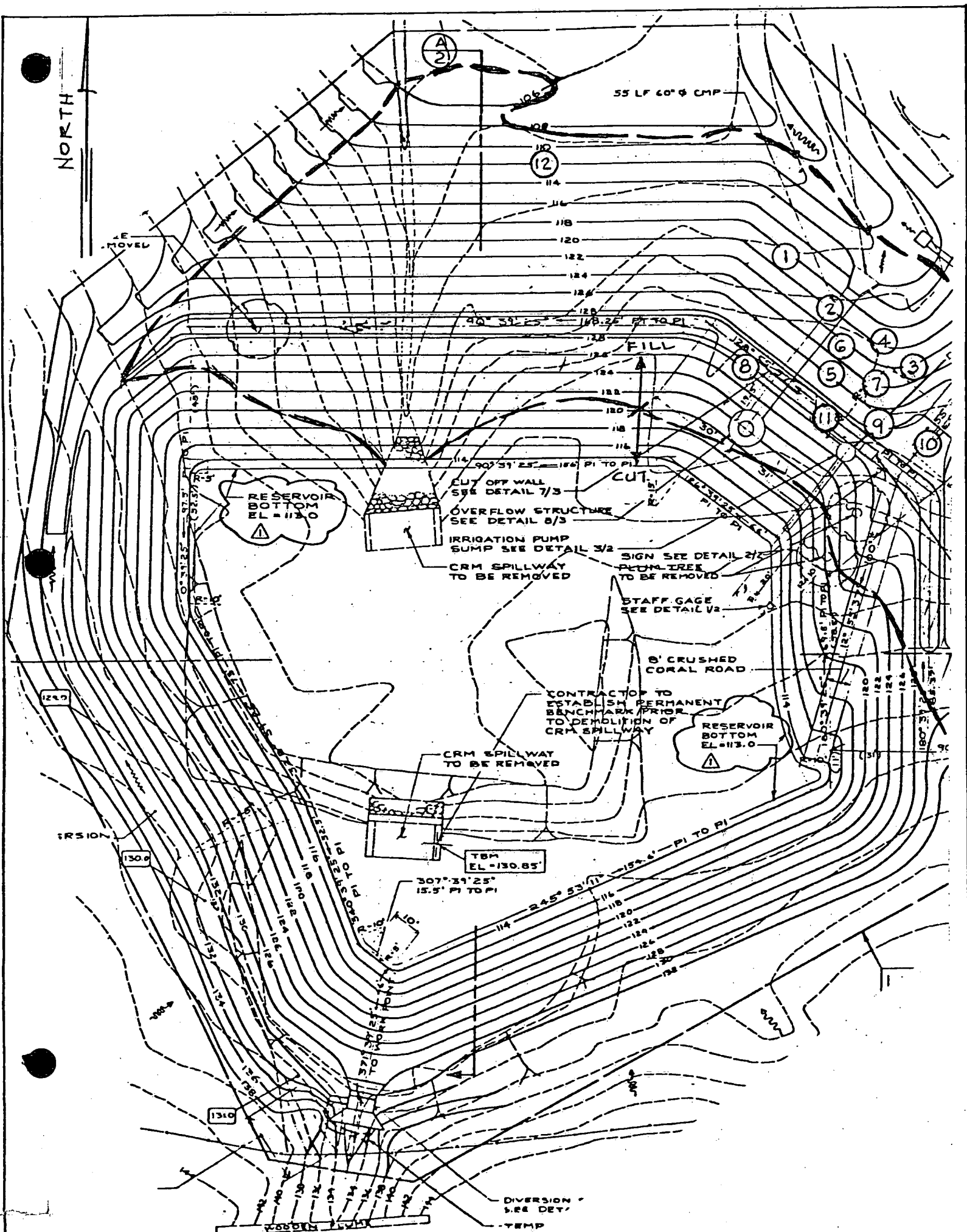
* Approximate depth below finish grade.

** Density in pounds per cubic foot. Standard density refers to density as indicated by the ASTM Method, D-1557-70

*** Tests indicate the relative compaction of the soils only at the test locations.

① Indicates Test #1... taken in the AREA shown.

BY Ronald S. Hume



NOTE:
 ① INDICATES THE ESTIMATED LOCATION OF TEST NO 1 TAKEN IN THE LOT SHOWN. FOR TEST RESULTS, SEE SUMMARY.

TEST DATES: FROM 5-13-81 TO 5-26-81

TEST LOCATION SKETCH		
FOREMOST FARMS		
3.5 M.G. RESERVOIR		
WAIMANALO, OAHU, HAWAII		
TAX MAP KEY: 4-1-08: POR. 80		
Dr. _____	WALTER LUM ASSOCIATES, INC. 3030 WAIALAE AVE. CIVIL ENGINEERS PHONE 737-7931	Sheet _____
Date 5/81		of _____
Rev. _____		

WALTER LUM ASSOCIATES, INC.
CIVIL, STRUCTURAL, SOILS ENGINEERS

WALTER LUM
EDWARD WATANABE
EZRA KOIKE
WALLACE WAKAHIRO
3030 WAIALAE AVE., HONOLULU, HAWAII 96816 • TEL. 737-7931

May 29, 1981

MEMORANDUM

TO: MR. ALAN OKAMOTO
The Russ Smith Corporation

FROM: Ezra Koike

RE: Foremost Farms 3.5 M.G. Reservoir
Waimanalo, Oahu, Hawaii

Thank you for your memo of May 22, 1981. We are in agreement with you.

It is our understanding that Foremost-McKesson, Inc. has deleted our suggestion of grouting under the corrugated pipe to fill the space between corrugations to minimize erosion and piping potential.

The owners should allow for future repairs and maintenance should sloughing or slippage of the embankment or erosion along or around the drain line occur.

Respectfully submitted,

WALTER LUM ASSOCIATES, INC.

By Ezra Koike
Ezra Koike

EK:vl

WALTER LUM ASSOCIATES, INC.

CIVIL, STRUCTURAL, SOILS ENGINEERS

WALTER LUM
EDWARD WATANABE
EZRA KOIKE
WALLACE WAKAHIRO

3030 WAIALAE AVE., HONOLULU, HAWAII 96816 • TEL. 737-7931

June 4, 1981

MEMORANDUM

TO: MR. ALAN OKAMOTO
The Russ Smith Corporation

FROM: Walter Lum Associates, Inc.

RE: Foremost Farms 3.5 M.G. Reservoir
Compaction of Trench Backfill - 60-in. CMP

This is a follow-up of our telephone conversation, June 3, 1981, regarding the trench backfill around the 60-in. CMP.

During our site visit, June 3, 1981, the contractor began backfilling the 60-in. CMP trench.

From field observations and hand probings, the backfill near the bottom of the pipe appeared to be soft to medium consistency after being compacted with a "pogo stick" hand tamper adjacent to the pipe and a "jumping jack" mechanical hand tamper in the unrestricted area. Based on a field density test, the contractor was informed that, in our opinion, the compacted backfill did not meet the minimum 90% compaction. In a telephone conversation with Mr. Kurisu of Brill, Inc., we recommended that Mr. Kurisu contact the owner or his field representative to resolve the problem prior to continuing the backfill work.

It was our understanding that the contractor will continue to backfill the trench by compacting the backfill material as much as practicable with the present construction method.

Since the contractor may not be able to compact the trench backfill to the minimum requirement of 90% compaction in localized areas, this matter, especially adjacent to the lower half of the pipe, should be resolved between the owner and the contractor.

Respectfully submitted,

WALTER LUM ASSOCIATES, INC.

By Wallace Wakahiro
Wallace Wakahiro

WW:vl

cc: Brill, Inc.
Foremost Farms

WALTER LUM ASSOCIATES, INC.
CIVIL, STRUCTURAL, SOILS ENGINEERS

WALTER LUM
EDWARD WATANABE
EZRA KOIKE
WALLACE WAKAHIRO
3030 WAIALAE AVE., HONOLULU, HAWAII 96816 • TEL. 737-7931

TO: THE RUSS SMITH CORPORATION
677 Ala Moana Boulevard, Suite 1000
Honolulu, Hawaii 96813
ATTENTION: Mr. Alan Okamoto
Gentlemen:

DATE: June 25, 1981

Re: FOREMOST FARMS 3.5 M.G. RESERVOIR
FIELD DENSITY TEST REPORT

We Are Sending You Herewith ☒

Under Separate Cover ☐

☐ Prints
☒ Location Plan
☒ Field Density Test Results
☐ Boring Logs
☐ Laboratory Test Results
☐ Soil Report

☐ Review and comment
☐ Approval
☐ Signature
☒ Your use and files

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General Remarks:

For period ending June 18, 1981.

cc: Brill, Inc.
Foremost Farms

Yours truly,

WALTER LUM ASSOCIATES, INC.

By W. Wakahe

FIELD DENSITY TEST REPORT

FOREMOST FARMS - 3.5 M.G. RESERVOIR

Field Density Test Results as follows:

Ending JUNE 18 1981Sheet 1 of 2 Sheets

Date	TEST No. TEST No.	Fill Layer*	Moisture Content	Dry Density**	Standard Density**	Relative Compaction***
5-27-81	①	17'±	34	88	91.0	96
"	②	16'±	35	88	"	96
5-29-81	③	14'±	37	88	91.0	96
6-1-81	④	14'±	36	86	91.0	95
"	⑤	13'±	39	85	"	94
6-2-81	⑥	12'±	37	84	91.0	92
6-3-81	TRENCH 60" CMP ⑦	4'± Δ	44	74	91.0	81
"	⑦	10'±	36	88	"	96
6-4-81	TRENCH 60" CMP ⑧	3'± Δ	40	83	91.0	91
"	⑧	9'±	37	85	"	94
6-5-81	TRENCH 60" CMP ⑨	3'± Δ	36	84	91.0	92
"	⑨	9'±	38	85	"	94
"	⑩	8'±	37	85	"	94

* Approximate depth below finish grade.

** Density in pounds per cubic foot. Standard density refers to density as indicated by the ASTM Method, D-1557-70

*** Tests indicate the relative compaction of the soils only at the test locations.

① Indicates Test #1.. taken in the AREA shown.

Δ APPROXIMATE DEPTH BELOW TOP OF PIPE.

BY W.W.

WALTER LUM ASSOCIATES, INC.

CIVIL, STRUCTURAL, SOILS ENGINEERS

WALTER LUM
EDWARD WATANABE
EZRA KOIKE
WALLACE WAKAHIRO

3030 WAIALAE AVE., HONOLULU, HAWAII 96816 • TEL. 737-7931

FIELD DENSITY TEST REPORT**FOREMOST FARMS - 3.5 M.G. RESERVOIR**

Field Density Test Results as follows:

Ending JUNE 18 1981Sheet 2 of 2 Sheets

Date	Lot No.	Fill Layer*	Moisture Content	Dry Density**	Standard Density**	Relative Compaction***
6-8-81	(11)	7'±	37	85	91.0	94
6-10-81	(12)	6'±	31	88	91.0	97
6-12-81	(13)	5'±	39	83	91.0	91
6-15-81	(14)	4'±	36	86	91.0	94
"	(15)	3'±	35	87	"	95
6-16-81	(16)	2'±	30	86	91.0	95
6-18-81	(17)	1'±	32	85	91.0	93

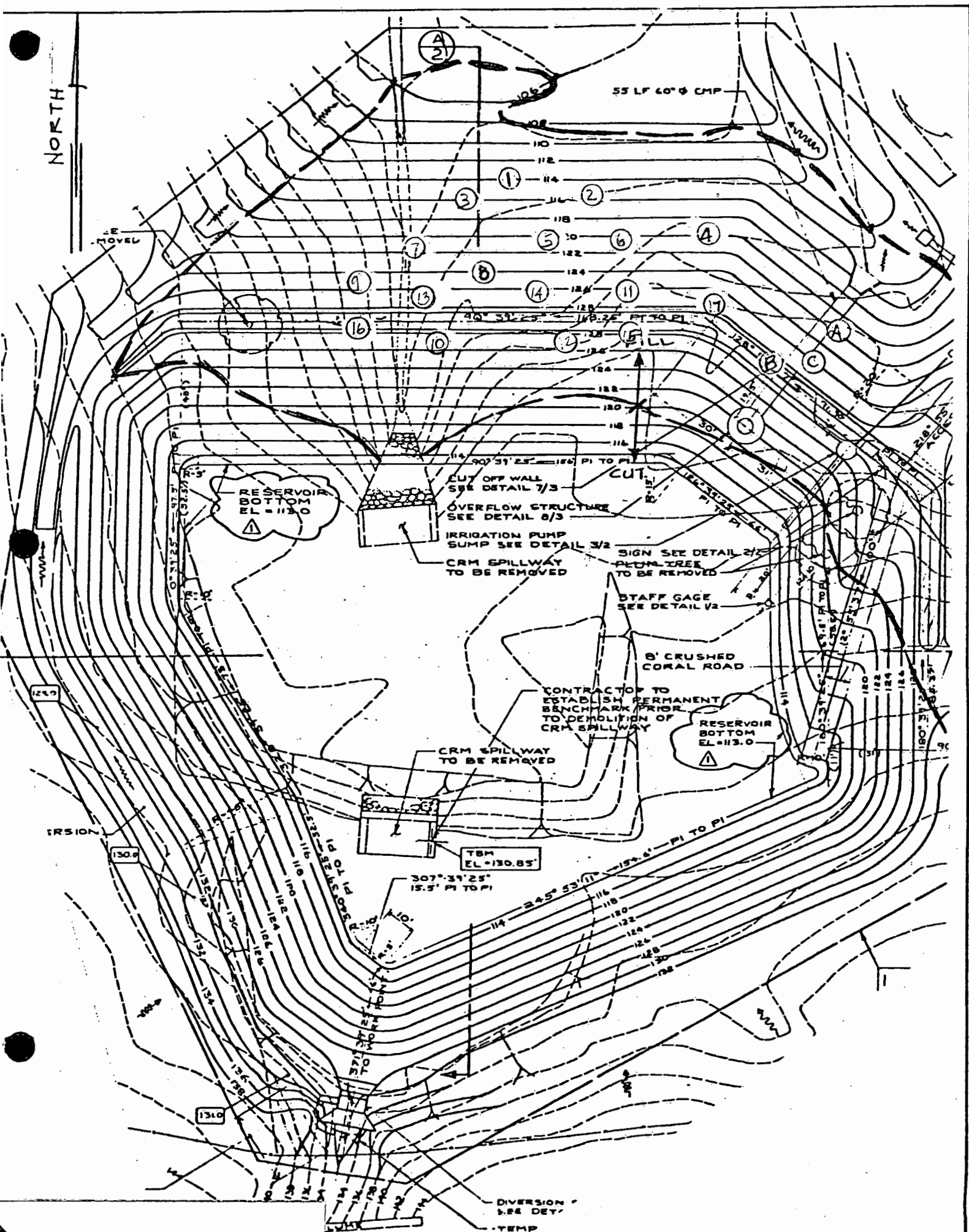
* Approximate depth below finish grade.

** Density in pounds per cubic foot. Standard density refers to density as indicated by the ASTM Method, D-1557-70

*** Tests indicate the relative compaction of the soils only at the test locations.

(11) Indicates Test # 11, taken in the AREA shown.

BY WW



TEST LOCATION SKETCH

FOREMOST FARMS

3.5 M.G. RESERVOIR

WAIMANALO, OAHU, HAWAII

TAX MAP KEY: 4-1-08: POR. 80

ATED
I TAKEN
FOR
MARY.

6-18-81

Dr. _____
Date 5/81
Rev. _____

WALTER LUM ASSOCIATES, INC.
3030 WAIALAE AVE.
CIVIL ENGINEERS
PHONE 737-7931

Sheet _____
of _____

WALTER LUM ASSOCIATES, INC.

CIVIL, STRUCTURAL, SOILS ENGINEERS

WALTER LUM
EDWARD WATANABE
EZRA KOIKE
WALLACE WAKAHIRO
3030 WAIALAE AVE., HONOLULU, HAWAII 96816 • TEL. 737-7931

TO: THE RUSS SMITH CORPORATION
677 Ala Moana Boulevard, Suite 1000
Honolulu, Hawaii 96813
ATTENTION: Mr. Alan Okamoto

DATE: July 23, 1981

Gentlemen:

Re: FOREMOST FARMS 3.5 M.G. RESERVOIR
FIELD DENSITY TEST REPORT

We Are Sending You Herewith ☒Under Separate Cover ☐

☐ Prints
☒ Location Plan
☒ Field Density Test Results
☐ Boring Logs
☐ Laboratory Test Results
☐ Soil Report

☐ Review and comment
☐ Approval
☐ Signature
☒ Your use and files

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General Remarks:

For period ending July 17, 1981.

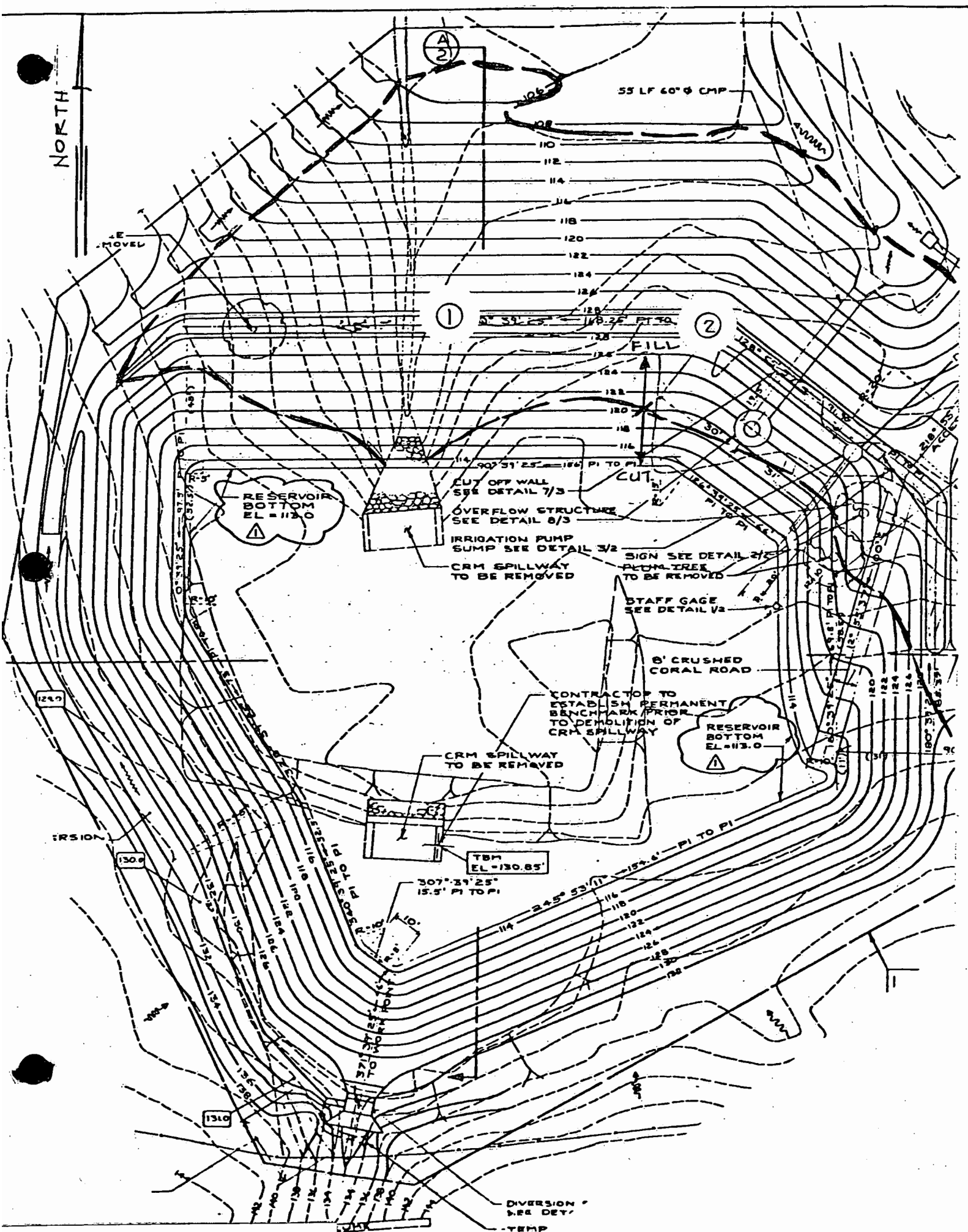
cc: Brill, Inc.
Foremost Farms

Yours truly,

WALTER LUM ASSOCIATES, INC.

By

W. W. Wakahiro



TEST LOCATION SKETCH
 FOREMOST FARMS
 3.5 M.G. RESERVOIR
 WAIMANALO, OAHU, HAWAII
 TAX MAP KEY: 4-1-08: POR. 80

ATED
 I TAKEN
 OR
 MARY.

7-17-81

Dr. _____
 Date 5/81
 Rev. _____

WALTER LUM ASSOCIATES, INC.
 3030 WAIALAE AVE.
 CIVIL ENGINEERS
 PHONE 737-7931

Sheet

of